

*Handwritten initials*



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/040,535      | 12/28/2001  | Nigel J. Tolson      | 034942-268          | 9807             |

7590 07/21/2005  
Robert E Krebs  
Thelen Reid & Priest LLP  
PO Box 640640  
San Jose, CA 95164-0640

EXAMINER

CHOW, CHARLES CHIANG

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2685     |              |

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/040,535

**Applicant(s)**

TOLSON, NIGEL J.

**Examiner**

Charles Chow

**Art Unit**

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**Detailed Action*****Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rossi (US 5,587,924) in view of Kahn (US 3,683,130).

Regarding **claim 11**, Rossi teaches a filter apparatus [ Fig. 5A] comprising an active twin-T filter [ active notch filter 50a having R1-R3, C1-C2 formed in twin-T connection, Fig. 5A] and a passive notch filter network [ the passive notch filter having  $I_A$  in series with  $C_A$  in 48a] coupled to the active twin-T filter [50a; col. 6, lines 3-15], wherein at least said active twin-T filter is operable to filter communications signal associated with a first wireless communication standard [ the filter in Fig. 5A can be utilized in a mobile telephone, col. 2, lines 3-62, for removing the noise from battery supply Vbatt, for removing noise associated with communication circuit powered by the Vbatt, col. 6, lines 24-36]. It is considered that any communication signal entering this filter will be filtered, for the filtering of communication signal associated with the wireless first communication standard. Rossi does not clearly state the active notch filter 50a is a twin-t filter. However, Kan teaches that a notch filter is commonly be referred to as a twin-t filter [col. 1, lines 32-35]. Therefore, it would have been obvious that Rossi's active notch filter 50a is a twin-T filter, for an ordinary skill person to utilize the twin-t filter to perform the notch function.

Art Unit: 2685

Regarding **claim 12**, Rossi teaches the said passive notch filter network [48a] is operable to filter communication signals associated with a second wireless communication standard [passive filter 48a can filter a second wireless communication signal from the communication circuit powered by Vbatt in the mobile telephone device, col. 2, lines 3-62; col. 6, lines 24-36, and any communication signal entering this filter will be filtered].

***Allowable Subject Matter***

2. The following is an examiner's statement of reasons for allowance:

The primary reference Murtojarvi (US 2002/0168,956A1) has later filing date than applicant's filing date 12/28/2001 (pages 3-4 of applicant's amendment) and Claims 8-10 are allowed in the previous office action.

Claims 1-10 are allowable over the prior art of record, the prior art fails to teach singly, particularly, or in combination, the subject matter, for the **first active twin-T filter** in a **first signal path defining a first sharp notch at the center of a second adjacent channel**; and a first passive twin-T filter section coupled to receive output of the first active twin-T filter, defining a second sharp notch at the center of a next adjacent channel, to suppress spurious signals at frequencies of modulation product, as shown in the independent claims 1, 6, 8, 11, for the miniature battery powered portable dual mode quadrature receiver (Fig. 1) for operating in different channel spacing, 30 to 200 KHz, in system for IS136, Amps, PCS, GSM, Edge frequency band, to efficiently removing unwanted image signal at the adjacent channel and next adjacent channel, by the sharper frequency response roll off characteristic of the twin-T filters. The dependent claims are also allowable due to their dependency upon the independent claims and having additional claimed features.

Art Unit: 2685

The closest patent to **Jayaraman et al. (US 2003/0087,622 A1)** teaches a filter circuit apparatus (410c) for removing upper and lower adjacent channel interference ACI (Fig. 4, abstract, [0011-0014]) for the CDMA super heterodyne quadrature demodulation (Fig. 2, [0027, 0023-0026]. Jayaraman et al. fail to teach the passive twin-T filter is coupled to the active twin-T filter to provide a second sharper notch at the center of the next adjacent channel.

**West (US 3,577,179)** teaches a active twin-T filter 10 in cascading with active Twin-T filter 50, 60 for providing sharp frequency notch response [Fig. 1, notch response curve for stage 2 in Fig. 2; abstract, col. 1, lines 16-42). West fails to teach the passive twin-T filter is coupled to the active twin-T filter to provide a second sharper notch at the center of the next adjacent channel.

Other prior arts in below has been considered, but they fail to teach the above claimed features.

**Murtojarvi (US 2002/0168,956 A1)** teaches the active twin-T filter 8 coupled to the passive twin-T filter 10 (Fig. 7, [0066-0068]) for the sharper frequency notch filtering.

**Anderson (US 3,579,135)** teaches a twin-t notch filter (Fig. 1-6, abstract, col. 1, lines 5-53), the active bootstrapping topology configuration of the active twin-T filter, to sharpen up the filtering response curve (col. 4, line 5-20). Anderson teaches the improved stable active notch filtering network as shown in Fig. 2, with accuracy and efficiency for without tuning, for rejecting adjacent frequencies (col. 1, lines 11-32).

**Daniels et al. (US 3,904,978)** teaches the active twin-T filter for providing a fourth order transfer function for sharper attenuation of unwanted signal [ abstract, Fig. 1, Fig. 6, col. 1, line 51 to col. 2, line 21].

Any comments considered necessary by applicant must be submitted no later than the

Art Unit: 2685

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

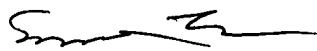
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow C.C.

June 23, 2005.

  
EDWARD F. URBAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000